

# MULLARD VALVE P.M.4.D.X

Dull emitter valve for use with 4 volt accumulator

## General.

A dull emitter detector valve of great sensitivity.

## Working Conditions

Max. Filament voltage 4.0 volts  
 Filament current 0.1 amp  
 Max. Anode voltage 150 volts

## Filament.

This valve should be used at the rated filament voltage. Under these conditions it has a long useful life, whilst the use of higher filament voltage definitely reduces the filament life.

## Filament Resistance.

When used with a 4 volt accumulator a filament control resistance is not essential. The use of a 6 volt accumulator with this valve is strongly deprecated but if so used a fixed resistance of 20 ohms must be included. If desired for control purposes a 5 ohm variable resistance may be used in all cases in addition.

**THIS FILAMENT HAS PRACTICALLY NO GLOW WHEN WORKING AT ITS CORRECT VOLTAGE.**

## As Detector.

The usual grid leak (2 to 3 megohms) and condenser (.0003 micro farads) may be used. It is advisable, but not essential that the grid return lead be connected to the positive filament limb. It is specially good for "anode bend" rectification. The high mutual conductance of this valve renders it an admirable detector valve.

## As H.F. Amplifier.

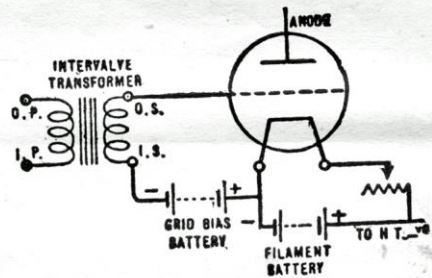
H.T. of 50-150 volts may be used. The P.M.3. is more suitable than the P.M.4.D.X. for H.F. Amplification.

## To Prevent Oscillation.

If the valve oscillate too readily because of the high mutual conductance the oscillations can be controlled by:—(a) loosening the reaction coupling—by separating the coils or using a smaller reaction coil, (b) dimming the filament, or (c) by the grid potentiometer control if fitted to the set.

## As L.F. Amplifier.

To obtain best results use negative grid bias as shown in the diagram below.



ANODE VOLTS	75	100	125	150
GRID BIAS VOLTS	0-1½	1½-3	3-4½	4½-6

This valve has an amplification factor of 15 and an impedance of 7,500 ohms. It should preferably be coupled to the first Low Frequency Amplifier with a Mullard P.M. Low Frequency Transformer, in order to take full advantage of its low impedance. Resistance-Capacity Coupling such as the Mullard P.M. R.C.C. Unit may however be used. It is also suitable for use with loud speakers as power amplifier.

## Multi Valve Sets.

Valves suitable for use in conjunction with the P.M.4.D.X are as follows :  
 P.M.3.A.—(m=35), Res.-Capacity Coupled Amplification. P.M.3.—(m=14), Detection, H.F. and L.F. Amplification. P.M.4.—(m=7), Power Amplification. P.M.254.—(m=3), Super Power Amplification. All the above valve are for use on 4 volts L.T. supply.

All Mullard P.M. valves can be supplied in British or American bases.

**The filament of this valve must never be run bright.**

## IMPORTANT NOTICE

**as to return of Mullard Valves**

The Valve in this container has been thoroughly tested. In the event of its being returned to the Manufacturers it will be accepted only on the express conditions :

1. That it is forwarded at Senders' risk and expense.
2. That if the Manufacturers decide it is necessary to break up the valve for inspection they are at liberty to do so without any obligation to return or replace it.